CITY OF SUNNYVALE
REPORT
Planning Commission

January 26, 2004

SUBJECT: **2002-0076 - City of Sunnyvale** - Adoption of polices and an ordinance to promote and create incentives for sustainable development in the disciplines of: sustainable sites, water efficiency, energy and atmosphere, materials and resources and indoor environmental quality. (Negative Declaration)

REPORT IN BRIEF

Sustainable development and green building policies were identified as an area of study by both staff, as an administrative study item in 2001, and by the City Council, as a study issue for 2002. A joint study session with the City Council and Planning Commission was held in January 2003 to develop an informal work plan.

The goals of sustainable development and green buildings are to reduce the usage of resources in construction and operation of buildings and provide better indoor environmental quality for building occupants. Staff has researched existing policies and ordinances that achieve these goals and existing programs in other jurisdictions. There are basically two possible approaches: (1) develop a customized program for Sunnyvale, or (2) adoption of the US Green Building Council's model LEED (Leadership in Energy and Environmental Design) program. LEED is designed mainly for office and industrial buildings.

Two case studies were completed to determine how typical new Sunnyvale buildings would perform based on the LEED rating system. Additional construction costs for various levels of LEED certification were estimated. The findings determined that the additional construction cost for certain LEED credits and compliance may be minimal.

Although LEED programs are in the development stages for retail and single

family residential projects, there are existing guidelines that can be used to encourage the community to include green building design features into new construction.

Based on staff research and findings, the following is recommended:

- Adopt a Council Policy that encourages public facilities to include green building design features into new construction, remodeling, and maintenance of public facilities.
- Adopt an ordinance to allow an additional 5% Floor Area Ratio (FAR) for buildings located in the industrial zoning districts (excluding the Moffett Park Specific Plan area) without a Use Permit when the building is designed and intended for LEED Certification
- Provide education and resources to the community to encourage sustainable development and green building design features
- Encourage staff training and education in the green building industry and advances in green building products

Although specific requirements for the Moffett Park Specific Plan area will be reviewed and approved at a separate public hearing, staff has included preliminary findings and recommendations for a green building program for this area. No action is required for these recommendations at this time.

BACKGROUND

In 2001 Community Development Department staff identified an administrative item to research sustainable development practices and programs. This research was part of on-going staff education on current development trends.

At the December 2001 City Council Study Issues workshop, the Council ranked the Energy Regulations and Green Building Policies and Guidelines (Attachment A) for study in 2002. As staff started to research the issue it was realized that the issue would take more staff time than planned to complete. Combined with the lack of full staff at that time, the issue was extended and listed as a continuing item for 2003. In January 2003 a joint study session was held with City Council and Planning Commission to provide an informal work plan for 2003.

Sustainability and sustainable development can have many different interpretations and meanings to different people. There is a wide array of definitions used that range from economic to social to environmental. Staff has reviewed numerous definitions and selected the following from the World Commission on Environment and Development, 1987:

> Sustainability is meeting the needs of the present without compromising

the ability of future generations to meet their own needs.

Development and the built environment have a significant effect on the environment and resources. Buildings consume or are responsible for:

- 40% of the world's total energy use
- 30% of raw materials consumption
- 25% of timber harvest
- 35% of the world's CO_2 emissions
- 16% of fresh water withdrawal,
- 40% of municipal solid waste destined for local landfills
- 50% of ozone-depleting CFCs still in use.
- Negative effects on watersheds, habitat, air quality, and community transportation patterns
  (Source: Worldwatch *Paper #124*).

Sustainable development is the practice of sustainability that focuses on the built environment. Building materials and design, construction techniques, and building operations and maintenance all have environmental impacts that can be minimized. Green Building practices promote construction of buildings that are healthier for the occupants and healthier for the environment. Following is the definition proposed by staff for sustainable development:

> Sustainable development is a practice designed to use natural resources in a manner which does not eliminate, degrade, or diminish their usefulness for future generations.

EXISTING POLICY

Although Sunnyvale does not have a single policy for sustainability, there are many policies and code requirements throughout different departments/divisions that are designed to achieve the goals and purpose of a sustainable development program. Following are examples of programs, policies, and ordinances that encourage sustainability and sustainable development in Sunnyvale:

20-Year Budget

Sunnyvale's 20-year budget forecast allows the long-term benefits to be understood. For example, if something costs $100,000 today and it can be determined that this is less than the present value of savings over the next 20 years, it makes sense to do it. An example of this type of benefit of the 20-year budget is the photovoltaic cells on the new Senior Center. The present value of the savings in electricity costs over the next 20 years is greater than the installation costs today.

Solid Waste and Recycling
Council Policy 7.1.6 - Recycled Paper Procurement Policy
Require the purchase of recycled paper and paper goods when it is economically feasible to do so.

The Solid Waste Program's mission is to reduce the amount of refuse disposed and to provide reliable, competitively-priced, and environmentally sound services for waste reduction, recycling, and solid waste collection and disposal. An important component of the City's diversion effort is the Sunnyvale Materials Recovery and Transfer (SMaRT) Station and Drop-off Center where recyclables and yard trimmings are sorted, processed and marketed; the remaining garbage is hauled to Kirby Canyon Landfill in San Jose for disposal.

Storm Water Runoff
Municipal Code Section 12.60.010 provides regulations for reducing the amount of pollutants that are discharged from the storm drainage system. The storm drain system is for the control of flooding only and the water that enters the drains is not treated before emptying into local creeks that flow to South San Francisco Bay. Regulating pollutants entering the storm drain system is done during construction, by inspecting on-going industrial and commercial facilities, educating business operators, and responding to reports of stills or dumping.

The California Regional Water Quality Control Board also requires that Sunnyvale City facilities reduce the usage of pesticides in order to reduce impacts on urban streams. Sunnyvale has established an integrated pest management policy that significantly restricts the selection of pesticides only to times when their use can be justified, after other options have been considered, and when application methods used will prevent the contamination of storm water and urban streams.

Water Treatment and Usage
Municipal Code Section 12.04.010 provides requirements for water treatment of usage. The Water Pollution Control Plant's mission is to protect public health, safety, property and the quality of the Bay. This is done by treating water from the sewerage system before it is discharged to the Bay. While consistently meeting this goal, the Plant reuses many byproducts of the treatment process. These include producing electricity and mechanical power from waste gases, recovering heat from engines, producing an alternative to soil for daily landfill cover or a soil amendment for agricultural and pasture land, and supplementing the city water supply by producing recycled water distributed through a separate system for non-potable uses (e.g. landscape irrigation).

Landscape Practices

Municipal Code Section 19.38.070 provides landscape standards and requirements. Water conserving plants are to be installed in 70% of all landscaped areas for most multi-family residential, commercial and industrial sites. Additionally, for new parking lots, trees are to be planted and maintained to ensure that at least 50% of the parking area will be shaded within 15 years which reduces the heat island effect.

Air Quality
The Air Quality Sub-Element's goal is to improve Sunnyvale's air quality and reduce the exposure of its citizens to air pollutants. This is achieved through a series of policies and action statements such as promoting spare the air days and nights, reducing automobile emissions through traffic and transportation improvements, and promoting pedestrian, bicycle and transit modes of travel.

Transportation Demand Management
Transportation Demand Management (TDM) is a general term for strategies that result in more efficient use of transportation resources. TDM programs are generally required for all high intensity office and industrial development.

California Title 24 Energy Requirements
The State of California has probably the most stringent energy conservation standards in the country. The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated every few years and most recently in 2001. According to California Energy Commission, the standards (along with standards for energy efficient appliances) have saved more than $20 billion in electricity and natural gas costs. It is estimated the standards will save $57 billion by 2011.

DISCUSSION

Extensive policies and ordinances exist to support sustainability and sustainable development in Sunnyvale. However, the City does not have a green building program. Based on staff research, there are two possible approaches: (1) a customized program for Sunnyvale, or (2) adoption of US Green Building Council's (USGBC) program. Several jurisdiction have designed and developed a green building program specific to their jurisdiction. The benefit of this type of program is that it would be specifically tailored to Sunnyvale's goals, needs, and desires. However, this type of program would be very expensive to develop because it would require the hiring of a consultant and extensive staff training and training for the community.

The other option would be to adopt (or modify) the green building program designed by the US Green Building Council (USGBC), dubbed LEED. LEED stands for Leadership in Energy and Environmental Design. The USGBC is a

national coalition of leaders from across the building industry who work together to promote buildings that are environmentally responsible, profitable and healthy places to live and work. The LEED program provides an extensive list of green building design options. Design professionals can choose to implement options that work best for each specific project. It is a performance based program that provides design flexibility for each individual project, rather that a prescriptive program that sets the same requirements for all projects. A rating is given to the project based on the type and number of green building design options achieved. Following is a detailed description of the LEED program.

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)

LEED (Leadership in Energy and Environmental Design) was first introduced by the US Green Building Council (USGBC) in 1998. It is a voluntary program based on national standards for developing high-performance, sustainable buildings. The LEED program was created to:

- define "green building" by establishing a common standard of measurement
- promote integrated, whole-building design practices
- recognize environmental leadership in the building industry
- stimulate green competition
- raise consumer awareness of green building benefits
- transform the building market

LEED provides a complete framework for assessing building performance and meeting sustainability goals. Based on scientific standards, LEED emphasizes state-of-the-art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED recognizes achievements and promotes expertise in green building through a comprehensive system offering project certification, professional accreditation, training and practical resources.

LEED offers 69 different credits for new construction and major renovations of existing non-residential buildings and multi-family residential buildings over four stories. LEED does not yet have a program for single-family residential or multi-family residential up to three stories.

The LEED checklist (Attachment B) lists all of the credits available through the program. However, because many of the credits are based on project site or services available to the site, each individual development project will be able to achieve different credits. LEED is a performance based program that provides the project design team the ability to select which credits they will achieve and

how it will be designed. Following is the LEED rating system:

- Certified – 26-32 points
- Silver – 33-38 points
- Gold – 39-51 points
- Platinum – 52-69 points

As of August 2003, there are 852 projects registered with the USGBC for LEED certification (140 in California). The majority of these projects are still in the design and construction phase. After the project is completed, the design team submits documentation to the USGBC showing how each credit was obtained and achieved. Once the information has been verified by the USGBC, the LEED certification is awarded. This typically takes about four months after the building is completed. There are a total of 62 projects that have completed the LEED process and earned certification (9 in California). Although this number may appear low, the program has only existed for about five years. Last year alone, 441 buildings (of the total 852) were registered with the intent for future certification.

ALAMEDA COUNTY WASTE MANAGEMENT GUIDELINES

Although LEED does not yet offer a green building program for single-family or multi-family (up to three stories), the are guidelines for single-family homes. The Alameda County Waste Management Authority developed and published *Home Remodeling: Green Building Guidelines*. This is a document designed for use by professional contractors and homeowners to offer the following:

- Cost-effective suggestions to minimize construction-related waste
- Create healthier and more durable homes
- Reduce operating costs for homeowners
- Support local manufacturers and suppliers of resource-efficient building materials
- Methods to reduce the impacts of building communities; including solid waste management, water conservation, energy efficiency and resource conservation.

The practices contained in these *Guidelines* were selected for their viability in today's market and their ability to promote sustainable building. The *Guidelines* were developed through a partnership among local developers, architects, contractors, green building experts and staff of the Alameda County Waste Management Authority and Recycling Board. The Table of Contents and Introduction to this document are included as Attachment C for reference to this staff report. The complete document can be found at http://www.stopwaste.org/fssearch.html.

WHAT OTHER CITIES ARE DOING

City of San Jose

The City of San José has a Green Building Program that was adopted in 2000. As part of the program, a policy was adopted to incorporate green building principles and practices into all city owned and operated facilities. A modified version of LEED was adopted, dubbed San José LEED, which is the standard LEED program including local amendments. As of July 1, 2002, all City of San José facilities are to be designed to meet the San José LEED Certified rating; however, registration and approval from the USGBC is not required. The San José LEED program uses the same credits and rating system as the model LEED program, but, the City of San Jose requires certain credits be achieved (e.g. storm water management).

The program also encourages green buildings and sustainable development through educational programs, community outreach, and professional staff assistance. Informational links and resources are provided on the City web site (http://www.ci.san-jose.ca.us/esd/GB-HOME.HTM).

City of Pleasanton

The City of Pleasanton adopted an ordinance in 2002 that requires all new buildings over 20,000 square feet of conditioned space to be LEED Certified. Registration and certification with USGBC is encouraged but it is not required. The downtown area and historic buildings are exempt from this ordinance. All buildings are encouraged to be designed to meet the intent of LEED. Informational links and resources are provided on the City web site (http://www.ci.pleasanton.ca.us/planning_commdev.html).

In order to enforce this ordinance, Pleasanton has hired a green building consultant to assist in review of projects to determine if they meet the LEED Certification intent. Additionally, the city provides consultants to work with developers to educate them on the process and requirements. Extensive staff training has also been necessary.

City of Santa Monica

The City of Santa Monica has developed and adopted a city-wide sustainable program. The program includes a series of polices that support a whole city approach to sustainability including green buildings, education, outreach, storm water, transportation, and purchasing. There are various municipal code ordinance and standard development requirements established to achieve the sustainable goals; however, there is not a formal green building program.

On its web site, Santa Monica provides a tool to assist developers in determining what type of green building practices can be used and also provides a list of additional suggestions (http://pen.ci.santa-

monica.ca.us/environment/policy/construction/policies.htm).

City of Portland, Oregon
The City of Portland has also implemented a sustainable development policy that includes energy, solid waste, recycling, and green building components. Portland does not have a green building rating system. The city does have an Office of Sustainable Development with staff who provide assistance to developers to help them find grants and low interest loans for funding green building projects.

City of Seattle, Washington
In 1998 the City of Seattle developed a Sustainable Building Policy that requires all new City-funded projects and renovations over 5,000 square feet of occupied space to achieve a LEED Silver rating. All capital construction which falls under this policy is budgeted to meet at minimum the LEED Silver rating. Budget planning and life cycle cost analysis to achieve a higher rating of Gold or Platinum is encouraged. Additionally, the policy strongly encourages staff to attend LEED training. Other than standard municipal code requirements, Seattle does not mandate green building or LEED certification for private development.

Seattle also has a sustainable building program which provides information to the community about green building benefits and provides resources for materials. Informational links and resources are provided on the City web site (http://www.ci.seattle.wa.us/dclu/Sustainability/).

CASE STUDIES

The Sunnyvale Municipal Code has many requirements for development that are similar to many of the LEED credits. In order to determine the level that new buildings in Sunnyvale may achieve, two consultants were hired to analyze two typical new buildings. Determinations were made as to the number of LEED credits each building may earn under the existing conditions and the costs associated with each credit. The new Senior Center building and the office building at Mathilda Avenue and Java Drive (occupied by Yahoo!) were selected for the case studies.

The intent of these case studies was to determine how “typical” new Sunnyvale buildings perform in relation to LEED and what the cost implications would be if the same projects were required to meet the various LEED levels.

Each study was conducted based on readily accessible information and the cost estimates are based on construction costs. Additional design costs and the administrative costs associated with submitting an application to the USGBC

and potential construction delays are not included in the studies. For reference, it is staff's understanding that design costs are increased by about 1% for designing a LEED building. Additionally, the total design costs are generally 15% of the total building construction. Therefore, the additional LEED building design costs are about 0.15% of the construction cost.

Senior Center
The Steinberg Group (who were the project architects for the Senior Center) completed the case study. The Steinberg Group has associates on staff who are LEED Accredited Professionals who were able to complete this study. The study results (Attachment D) are broken into five sections and the following table summarizes the findings:

Sunnyvale Senior Center

Evaluation Level	**Credits**	**Estimated Additional Construction Cost (% of the total construction cost)**
Existing Building	10	--
LEED Certified	26	$24,200 (0.3%)
LEED Silver	33	$75,350 (0.9%)
LEED Gold	39	$157,920 (2.0%)
LEED Platinum	52	$1,154,020 (14.4%)

It is important to note that for the base building, the photovoltaic system installed at the Senior Center was not included in the analysis. This is because this type of system in fairly expensive to install ($598,000 at the Senior Center) and is not typical in a standard City building. If the photovoltaic system were included, the base building would have achieved 13 LEED credits. The credits associated with the photovoltaic system were applied to the LEED Platinum level.

Office Building
RMW Architects designed the site and shell of the office buildings at the southeast corner of Mathilda Avenue and Java Drive (occupied by Yahoo!). They also have architects on staff who are LEED Accredited and were able to complete the case study for these buildings. Although RMW Architects did not design the interior tenant improvements for these buildings, the study does include basic assumptions about the costs and materials used.

The study received from RMW does not include the costs of the interior tenant improvements. However, staff believes that the tenant improvement costs should be included because they are part of the total construction costs of the buildings. Staff estimated the tenant improvement costs to be about $9 million dollars. The following table summarizes the study results (Attachment E) including the estimated tenant improvement costs:

Sunnyvale Office Building

Evaluation Level
Credits
Estimated Additional Construction Cost
(% of the total construction cost including tenant improvements)

Existing Building
8

--

LEED Certified
32
$492,000
(2.1%)

LEED Silver
33
$742,000

(3.1%)

LEED Gold
39
Cost Prohibitive

LEED Platinum
52
Not Attainable

STAFF FINDINGS

The intent of sustainable development is to create a built environment that more efficiently uses natural resources. As a municipality, sustainable development for individual projects is an attainable goal and will contribute to reduction in regional usage of natural resources.

Sunnyvale already has many sustainability and sustainable development standards which are similar to many other local jurisdictions. Many existing policies and ordinances improve and encourage sustainability. However, the City does not have a single source or location to provide sustainability information or direct the community to various resources. To accomplish that, staff has developed a web page that explains the existing sustainable programs and standards and provides resources and links to other green building agencies and information (http://sunnyvale.ca.gov/Departments/Community+Development/Planning+Division/Planning-Green+Buildings.htm).

Based on staff research, the one area for improvement is a green building program. Staff is recommending the adoption of the LEED program. LEED is an established and proven program for the design and construction of green buildings. LEED is a performance based program that allows the project design team to select which credit options best fit into each specific project. Additionally, because LEED is a national program, many design professionals are already familiar with it and understand how to make it work. The USGBC also provides many support services for LEED such as training, materials, and professional accreditation.

After the research and discussion with industry professionals and the community, staff has found that everyone involved embraces the concepts of green buildings and sustainable development. There are, however, competing values in terms of costs and environmental benefits. Although there are many statistics provided from green building advocacy groups that show operating cost savings for green buildings, the industry and LEED program are relatively

new and not many members of the development community have had an opportunity to be directly involved in a green project.

After many discussions with the development community, staff believes that the comfort level of understanding of green buildings and their benefits has increased. However, there is still a caution in terms of the increased costs and time.

Given the current economic conditions, it appears that it will be some time before staff receives applications for development of new industrial buildings. Based on that information and feedback from the development community, staff does not believe that new mandates, which could further delay new development, are appropriate at this time. In order for an new ordinance to be meaningful and effective, development must occur. If regulations hinder new development, the benefit of the regulation will not be realized.

Therefore, staff is recommending a phased approach to green buildings and implementation. The staff recommendations are based on providing information, education, and incentives for green building.

STAFF RECOMMENDATIONS

Public Facilities

Staff recommends approving a Council Policy (Attachment F) that encourages new and remodeled City buildings within the City of Sunnyvale incorporate the following sustainable development and design principles:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality

The policy also includes specific statements about incorporating sustainable design practices in new and remodeled City facilities, to the extent practicable (e.g. carpeting, paint, recycled content materials, environmentally-friendly cleaning products, concrete, Certified Wood, etc.).

The policy also encourages additional and on-going staff training as well as education and outreach to the community. Due to the current budget situation and the staff time needed to modify the existing specifications, it is anticipated that this policy will be phased in over the next few years.

Because there are no new City facilities planned for the near future, the policy does not contain any specific requirements for LEED standards for new City facilities. However, prior to the planning or design of any new City facility,

LEED certification will need to be considered.

Private Development (not including Moffett Park)
In accordance with the recommended policy, all private development will be encouraged to incorporate green building features and practices. The Alameda County Waste Management Authority and LEED will be used as guidelines. Staff is also recommending an ordinance (Attachment G) that will provide an incentive for private development to be LEED Certified with the USGBC.

Development within the industrial zoning districts will be allowed an additional 5% FAR above that allowed by the existing zoning district and General Plan, without a Use Permit (unless otherwise required by the SMC), when all of the following conditions are met:

- The building is designed to a LEED Certified building or a higher level;
- The building is registered and intended to be certified by the US Green Building Council (USGBC);
- A LEED accredited professional is required on the design team; and
- The entire project site has a Transportation Demand Management (TDM) program that shows traffic trip rates are not greater than the base FAR would generate.

This ordinance would not apply to properties with an Industrial to Residential (ITR) combining district or properties within the Moffett Park Specific Plan.

Staff has reviewed the possibility of providing additional FAR incentives for buildings rated as LEED Silver, Gold, or Platinum. However, as buildings are planned at significantly higher intensities than allowed by right, the environmental impacts also increase and should be fully evaluated for potential impacts. Proposed development significantly above the allowed level may be of concern to the community; therefore, staff is not recommending removing the opportunity for a public hearing at this time.

Also included in the draft Council Policy is encouragement for residential development to use the Alameda County Waste Management Authority's *Home Remodeling: Green Building Guidelines* as a resource for green building techniques and practices. The policy also encourages the use of the *Guidelines* for additions and remodels of existing residential buildings.

As the sustainable development and green building industry and standards are relatively new and changing rapidly, staff will continue to monitor and report back to Council with updates and proposed modifications in about five years. As new LEED standards and programs are developed for retail and housing, staff will analyze these programs and include them in future reports.

Moffett Park
The specific requirements for Moffett Park area will be determined with the follow-up of the Moffett Park Specific Plan. Following are preliminary recommendations that staff has discussed. These recommendations will be further refined into development standards for the final Moffett Park Specific Plan document that will be reviewed in its entirety at an independent public hearing.

Preliminary Staff Recommendation
Development above standard FAR limits (e.g. 50% FAR in the MP-TOD and 35% FAR in the MP-I, up to the maximum FAR levels) will not require a public hearing for additional floor area approval (site plan and architectural approval from the Planning Commission will still be required) when the following conditions are met:

Within the first five years after adoption:
- Meet the design intent of a LEED Certified building by demonstrating to City staff which design/construction measures are included to result in at least 26 LEED credits.
- A Certified Accredited LEED Professional must be on the design team.
- Partial credits may be considered (e.g. if energy savings is 8% vs. 10% required for the credit, then 0.8 credits may be given).
- Develop a monetary incentive for the first building in Moffett Park (in the initial 5 years) to seek formal LEED Certification.

After 5 years:
- Meet the requirements for a LEED Certified building for development above standard FAR
- Register the Building with the USGBC
- Submit LEED Checklist to USGBC
- Submit Certification request to USGBC after building is constructed
- A Certified Accredited LEED Professional must be on the design team.

After the initial five year period, all development of 10,000 square feet or more, regardless of the FAR, shall be designed to meet the intent of a LEED Certified building by demonstrating to City staff which design/construction measures are included to result in at least 26 LEED credits.

FISCAL IMPACT

The intent of the staff recommendation is to have minimal fiscal impact on the City. The proposed policy and incentive based ordinance will not have a significant fiscal impact. Staff review and research for the encouragement and analysis of green buildings will take additional staff time when reviewing

development projects.

The staff training and research of alternative materials for facility maintenance will require the usage of staff time and expenses. This will be applicable for Community Development, Parks and Recreation, and Public Works staff. Staff estimates approximately $825 per person to receive full LEED training and certification plus 10 hours of staff time. Given the current training budget for the Community Development Department, staff training will take several years. However, if Council would prefer an accelerated training schedule, additional resources would be needed. If this is the direction from Council, the costs could be considered with the budget in June.

PUBLIC CONTACT

As part of the outreach and research for this study staff from three City departments (Public Works, Parks and Recreation, and Community Development) coordinated and participated in the following activities:

- Toured Bay Area green buildings.
- Met green building specialists, consultants, developers, contractors, and staff members from other cities.
- Met with developers, property owners, architects, business owners, and facility managers. Approximately 4 developers participated in these discussions.

Notification of the Planning Commission meeting for this item is part of the standard agenda publication.

Notice of Public Hearing
Staff Report
Agenda

Published in the *Sun* newspaper

Posted on the City of Sunnyvale's Website

Provided at the Reference Section of the City of Sunnyvale's Public Library
Posted on the City's official notice bulletin board

City of Sunnyvale's Website

ALTERNATIVES

1. Adopt the Council Policy and ordinance as attached
2. Adopt the Council Policy and ordinance with modifications
3. Direct staff to continue to monitor the green building industry, what other cities do, and the LEED program and report back to Council with updates and possible new recommendations within five years or sooner in necessary
4. Take no action

RECOMMENDATION

Staff recommends #1 and #3.

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Attachments

A. Study Issue Paper

B. LEED Checklist

C. Alameda County Waste Management Guidelines (Introduction and Table of Contents)

D. Case Study – Senior Center

E. Case Study – Office Building

F. Draft Council Policy

G. Draft Ordinance

Attachment A

NUMBER CDD-10

PROPOSED COUNCIL STUDY ISSUE

For Calendar Year: 2002

New X

Previous Year (below line/defer)

Issue Title: Energy Regulations and Green Building Policies and Guidelines

Lead Department: Community Development

General Plan Element or Sub-Element: Land Use and Transportation Element

1. What are the key elements of the issue? What precipitated it?

The key elements of this issue are to minimize negative energy related environmental impacts associated with building design, construction and operation. These impacts include utilization of resources such as building materials, energy loss, water consumption, production of waste and increased urban temperatures due to heat generation.

Precipitate by a more conscious environmental community and the recent energy crisis.

2. How does this relate to the General Plan or existing City Policy?

Land Use and Transportation Element

C4.4: Encourage sustainable industries that emphasized resource efficiency, environmental responsibility, and the prevention of pollution and waste.

3. Origin of issue:

Councilmember: Valerio

General Plan: _____

Staff: _____

Board or Commission:

Arts	**Housing & Human Svcs**	
Bicycle Advisory	**Library**	
Bldg. Code of Appeals	**Parks & Rec.**	
CCAB	**Personnel**	
Heritage & Preservation	**Planning**	**X**

Board / Commission Comment:

Planning **Commission ranked** **1** **of** **6**

4. Multiple Year Project? **No** **Expected Year of Completion** 2002

5. Estimated work hours for completion of the study issue.

(a) Estimated work hours from the lead department 500

(b) Estimated work hours from consultant(s): 0

(c) Estimated work hours from the City Attorney's Office:

(d) List any other department(s) and number of work hours:

Department(s): Public Works 200

Total Estimated Hours: 700

6. Expected participation involved in the study issue process?

(a) Does Council need to approve a work plan? **Yes**

(b) Does this issue require review by a Board/Commission? **Yes**

If so, which Board/Commission?

Planning, possible others

(c) Is a Council Study Session anticipated? **Yes**

(d) What is the public participation process?

Extensive outreach to the development and construction community. Close coordination with the Chamber of Commerce and Santa Clara County Manufacturing Group. Typical notification for Planning Commission and City Council public hearings.

7. Estimated Fiscal Impact:

Cost of Study	$ 0
Capital Budget Costs	$ 0
New Annual Operating Costs	$ 0
New Revenues or Savings	$ 0
10 Year RAP Total	$ 0

8. Staff Recommendation

X Recommended for Study

Against Study

No Recommendation

Explanation of Staff Recommendation (unless No Recommendation)

Staff recommend a proactive approach to this issue recognizing energy saving benefits that may accrue to the community over time.

City Manager	***Date***

LEED™ Version 2.1 Registered Project Checklist

LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN

Project Name
City, State

Yes	?	No			
			Sustainable Sites		14 Points
Y			Prereq 1	**Erosion & Sedimentation Control**	Required
			Credit 1	**Site Selection**	1
			Credit 2	**Urban Redevelopment**	1
			Credit 3	**Brownfield Redevelopment**	1
			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
			Credit 4.3	**Alternative Transportation**, Alternative Fuel Vehicles	1
			Credit 4.4	**Alternative Transportation**, Parking Capacity and Carpooling	1
			Credit 5.1	**Reduced Site Disturbance**, Protect or Restore Open Space	1
			Credit 5.2	**Reduced Site Disturbance**, Development Footprint	1
			Credit 6.1	**Stormwater Management**, Rate and Quantity	1
			Credit 6.2	**Stormwater Management**, Treatment	1
			Credit 7.1	**Landscape & Exterior Design to Reduce Heat Islands**, Non-Roof	1
			Credit 7.2	**Landscape & Exterior Design to Reduce Heat Islands**, Roof	1
			Credit 8	**Light Pollution Reduction**	1
Yes	?	No			
			Water Efficiency		5 Points
			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
			Credit 2	**Innovative Wastewater Technologies**	1
			Credit 3.1	**Water Use Reduction**, 20% Reduction	1
			Credit 3.2	**Water Use Reduction**, 30% Reduction	1
Yes	?	No			
			Energy & Atmosphere		17 Points
Y			Prereq 1	**Fundamental Building Systems Commissioning**	Required
Y			Prereq 2	**Minimum Energy Performance**	Required
Y			Prereq 3	**CFC Reduction in HVAC&R Equipment**	Required
			Credit 1	**Optimize Energy Performance**	1 to 10
			Credit 2.1	**Renewable Energy**, 5%	1
			Credit 2.2	**Renewable Energy**, 10%	1
			Credit 2.3	**Renewable Energy**, 20%	1
			Credit 3	**Additional Commissioning**	1
			Credit 4	**Ozone Depletion**	1
			Credit 5	**Measurement & Verification**	1
			Credit 6	**Green Power**	1

Materials & Resources — 13 Points

Yes	?	No			
Y			Prereq 1	**Storage & Collection of Recyclables**	Required
			Credit 1.1	**Building Reuse**, Maintain 75% of Existing Shell	1
			Credit 1.2	**Building Reuse**, Maintain 100% of Shell	1
			Credit 1.3	**Building Reuse**, Maintain 100% Shell & 50% Non-Shell	1
			Credit 2.1	**Construction Waste Management**, Divert 50%	1
			Credit 2.2	**Construction Waste Management**, Divert 75%	1
			Credit 3.1	**Resource Reuse**, Specify 5%	1
			Credit 3.2	**Resource Reuse**, Specify 10%	1
			Credit 4.1	**Recycled Content**, Specify 5% (post-consumer + ½ post-industrial)	1
			Credit 4.2	**Recycled Content**, Specify 10% (post-consumer + ½ post-industrial)	1
			Credit 5.1	**Local/Regional Materials**, 20% Manufactured Locally	1
			Credit 5.2	**Local/Regional Materials**, of 20% Above, 50% Harvested Locally	1
			Credit 6	**Rapidly Renewable Materials**	1
			Credit 7	**Certified Wood**	1

Indoor Environmental Quality — 15 Points

Yes	?	No			
Y			Prereq 1	**Minimum IAQ Performance**	Required
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	Required
			Credit 1	**Carbon Dioxide** (CO_2) **Monitoring**	1
			Credit 2	**Ventilation Effectiveness**	1
			Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
			Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
			Credit 4.2	**Low-Emitting Materials**, Paints	1
			Credit 4.3	**Low-Emitting Materials**, Carpet	1
			Credit 4.4	**Low-Emitting Materials**, Composite Wood & Agrifiber	1
			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
			Credit 6.1	**Controllability of Systems**, Perimeter	1
			Credit 6.2	**Controllability of Systems**, Non-Perimeter	1
			Credit 7.1	**Thermal Comfort**, Comply with ASHRAE 55-1992	1
			Credit 7.2	**Thermal Comfort**, Permanent Monitoring System	1
			Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
			Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

Innovation & Design Process — 5 Points

Yes	?	No			
			Credit 1.1	**Innovation in Design**: Provide Specific Title	1
			Credit 1.2	**Innovation in Design**: Provide Specific Title	1
			Credit 1.3	**Innovation in Design**: Provide Specific Title	1
			Credit 1.4	**Innovation in Design**: Provide Specific Title	1
			Credit 2	**LEED™ Accredited Professional**	1

Project Totals (pre-certification estimates) — 69 Points

Certified 26-32 points **Silver** 33-38 points **Gold** 39-51 points **Platinum** 52-69 points

ATTACHMENT C
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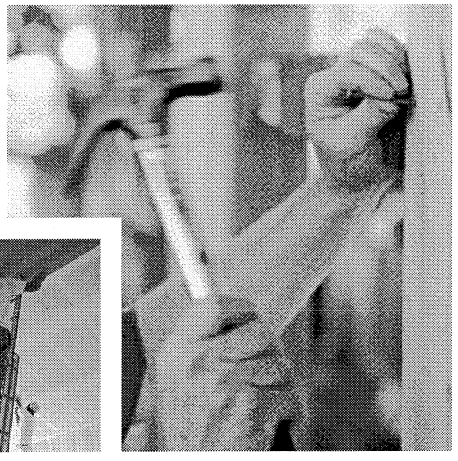
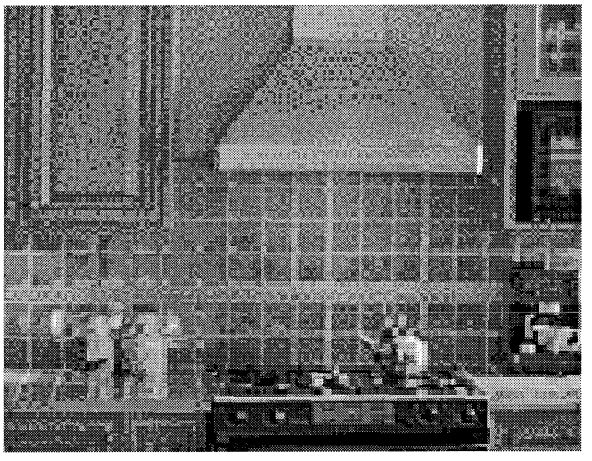
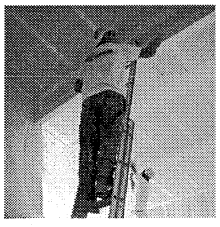
HOME REMODELING

GREEN BUILDING GUIDELINES







Alameda County Waste Management Authority
Alameda County Source Reduction and Recycling Board
www.stopwaste.org

777 Davis Street, Ste 100
San Leandro, CA 94577

510.614.1699 tel
510.614.1698 fax

Table of Contents

Introduction

Green building is just applied common sense. To demystify the process and move forward with your construction project, it is helpful to think of green building as the convergence of three fundamental objectives:

1 **Conserve natural resources**

2 **Increase energy efficiency**

3 **Improve indoor air quality**

Natural Resource Conservation

Conventional building practices consume large quantities of wood, plastic, cardboard, paper, water and other natural resources that lead – unnecessarily – to their depletion.

For example, wood is one of the most common building materials, but is often used wastefully. We have already harvested 95% of the nation's old-growth forests – a trend that simply cannot continue. Engineered lumber products such as wood I-joists, wood fiber laminates and oriented strand board, utilize fast growing farm trees as an alternative to old-growth forests. These products can use as little as 50% of the wood fiber to perform the same structural functions and are typically stronger, straighter and lighter than solid-sawn lumber.

Remodelers have a rapidly expanding range of green building materials from which to choose. Recycled-content decking, insulation, reclaimed lumber and other products divert waste from landfills, while providing quality and durability that often exceed conventional materials. For example, decking material made out of recycled plastic resins mixed with wood waste fibers can last up to five times longer than wood decks, and never need to be treated or painted.

Water conservation is another important issue. Wise water usage reduces the strain on resources as well as lowers expenses. Today, remodelers can take advantage of a new generation of high-efficiency washers, dishwashers, and landscape water management systems.

CONTRACTOR TIP | **PROVIDE A HOMEOWNER'S MANUAL OF PRODUCTS INSTALLED**

Provide homeowners with a product manual that describes the benefits of the various green materials installed and how to maintain them. Informing the homeowner about the green features and products will ensure the effective use and maintenance of the features for many years after the project is completed.

Energy Efficiency

Energy efficiency is a cornerstone of any green building project. Generation and use of energy are major contributors to air pollution and global climate change. Improving energy efficiency and using renewable energy sources are effective ways to improve air quality and reduce the impacts of global warming.

Improving energy efficiency is also an economically effective choice for consumers. Lowering utility expenses allows residents to enjoy the financial benefits year after year.

The first step to increase energy efficiency is to add insulation and weather stripping wherever possible, install double-glazed/low-E windows and upgrade to high-efficiency appliances. Other energy upgrades/choices include installing solar water heaters, photovoltaic panels, and purchasing "green power" generated from renewable sources like the sun, wind and biomass (when available).

Indoor Air Quality

The United States Environmental Protection Agency (EPA) reports that the air in new homes can be ten times more polluted than outdoor air. According to the New England Journal of Medicine, 40% of children will develop respiratory disease, in part, due to the chemicals in their homes. Poor indoor air quality is caused by the offgassing of chemicals found in many building materials as well as mold and mildew that build up in homes due to poorly designed and maintained heating and cooling systems.

One of the most common indoor pollutants is formaldehyde, a suspected human carcinogen. Kitchen cabinets, countertops, shelving and furniture are typically made from particleboard held together by formaldehyde-based adhesives. The formaldehyde is released into the home for years after these products have been installed. Many paints and floor finishes also contain unhealthy volatile organic compounds (VOCs). That "new house smell" is actually the odor of these volatile compounds offgassing and is a telltale sign that there are harmful chemicals in the indoor environment.

The building products industry has responded to these indoor pollution problems by developing alternative paint, finish, and adhesive products. For example, solvent-free adhesives used in flooring and countertops can eliminate many of the suspected and known human carcinogens. Paints, varnishes, and cleaners that don't utilize volatile compounds are now commonly available from most major manufacturers at costs comparable to conventional products.

In addition to the growing number of readily available and cost-effective green materials – an increasing number of builders and remodelers are also using natural building materials such as straw-bale, rammed earth, adobe and cob. While less common in their use, natural building products have a positive impact on the environment as they are renewable and abundant; energy-efficient in production, transport and use; non-polluting; durable and long lasting.

Benefits of Green Building

There are many reasons to build green. These include a concern for the environment, an interest in building more efficiently, health considerations or a desire to create an environmentally friendly image for your business. By applying a sustainable perspective to design, construction and remodeling, green building brings the benefits of resource conservation, energy savings and healthy living.

Each of the features listed in these Green Building Guidelines benefit the environment by addressing one or more of the following: resource conservation, energy efficiency, indoor air quality.

Cost Considerations

While green building and its environmental benefits are becoming more mainstream, it is commonly assumed that green building features and products translate into additional costs. What is often overlooked is the added value that green building contributes to the home: energy-efficiency, improved indoor air quality, healthier homes for the family, and durability. These Guidelines recommend methods and materials that range in cost–some of them cost no more or even less than conventional options.

Often the homeowner focuses on the "up-front" costs (materials and installation) to incorporate green features into a home. When other factors are considered, such as lower maintenance and operation costs, many of the recommended strategies in these Guidelines offer tangible economic benefits to the homeowner. Energy upgrades alone usually result in a payback through lower monthly energy costs.

When considering green building measures, it is very important to balance product and installation costs with other significant benefits such as energy savings, increased durability, enhanced air quality and healthier homes for occupants.

Architecture
Planning
Interiors

The Steinberg Group

LEED STUDY FOR THE CITY OF SUNNYVALE

Case Study: Sunnyvale Senior Center

October 27, 2003

60 Pierce Avenue
San Jose, California
95110
408.295.5446
Fax 408.295.5928

LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center
AS BUILT SCENARIO

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	15% Contractor Mark Up	Total Estimated Cost	% Increase to Base Bid ($7,988,000)	Comments
SUSTAINABLE SITES								
SS Prereq 1	Erosion & Sedimentation Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 1	Site Selection	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 2	Urban Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 3	Brownfield Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 4.1	Alternative Transportation, Public Trans. Access	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 4.2	Alternative Transportation, Bicycle Storage & Changing Rm.	1						
SS 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1						
SS 4.4	Alternative Transportation, Parking Capacity	1						
SS 5.1	Reduced Site Disturbance, Protect of Restore Open Space	1						
SS 5.2	Reduced Site Disturbance, Development Footprint	1						Non Applicable considering Senior Center Program
SS 6.1	Stormwater Management, Rate and Quantity	1						
SS 6.2	Stormwater Management, Treatment	1						
SS 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-roof	1						
SS 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	1						
SS 8	Light Pollution Reduction	1						Non Applicable at Senior Center / Community Center Public Parking Lot
	SS SUBTOTAL	14	2	$0	$0	$0	0.0%	
WATER EFFICIENCY								
WE 1.1	Water Efficient Landscaping, Reduce by 50%	1						
WE 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1						Non Applicable at Senior Center / Community Center Park in California Climate
WE 2	Innovative Wastewater Technologies	1						Non Applicable at Senior Center / Community Center Site
WE 3.1	Water Use Reduction, 20% Reduction	1						
WE 3.2	Water Use Reduction, 30% Reduction	1						
	WE SUBTOTAL	5	0	$0	$0	$0	0.0%	
ENERGY & ATMOSPHERE								
EA Prereq 1	Fundamental Building Systems Commissioning	0						
EA Prereq 2	Minimum Energy Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA Prereq 3	CFC Reduction in HVAC&R Equipment	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.1	Optimize Energy Performance, 20% New / 10% Existing	2	2	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.2	Optimize Energy Performance, 30% New / 20% Existing	2						
EA 1.3	Optimize Energy Performance, 40% New / 30% Existing	2						
EA 1.4	Optimize Energy Performance, 50% New / 40% Existing	2						
EA 1.5	Optimize Energy Performance, 60% New / 50% Existing	2						
EA 2.1	Renewable Energy, 5%	1	1					
EA 2.2	Renewable Energy, 10%	1	1					
EA 2.3	Renewable Energy, 20%	1	1	$598,900	inclusive	$598,900	7.5%	Photovoltaic System - Add Alternate Incorporated in Original Design
EA 3	Additional Commissioning	1						
EA 4	Ozone Depletion	1						
EA 5	Measurement & Verification	1						
EA 6	Green Power	1						Non Applicable at Senior Center / Community Center Site
	EA SUBTOTAL	17	5	$598,900	$0	$598,900	7.5%	

LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center
AS BUILT SCENARIO

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	Estimated Contractor Mark Up	Total Estimated Cost	Estimated % Cost Increase	Comments
MATERIALS & RESOURCES								
MR Prereq 1	Storage & Collection of Recyclables	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 1.1	Building Reuse, Maintain 75% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.2	Building Reuse, Maintain 100% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.3	Building Reuse, Maintain 100% of Existing Shell & 50% Non-Shell	1						Non Applicable at Senior Center / Community Center Site
MR 2.1	Construction Waste Management, Divert 50%	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 2.2	Construction Waste Management, Divert 75%	1						
MR 3.1	Resource Reuse, Specify 5%	1						
MR 3.2	Resource Reuse, Specify 10%	1						Non Applicable at Senior Center / Community Center Site
MR 4.1	Recycled Content, Specify 25%	1						
MR 4.2	Recycled Content, Specify 50%	1						
MR 5.1	Local/Regional materials, 20% Manufactured Locally	1						Non Applicable at Senior Center / Community Center Site
MR 5.2	Local/Regional materials, of 20% Above, 50% Harvested Locally	1						Non Applicable at Senior Center / Community Center Site
MR 6	Rapidly Renewable Materials	1						
MR 7	Certified Wood	1						
	MR SUBTOTAL	13	1	$0	$0	$0	0.0%	
INDOOR ENVIRONMENTAL QUALITY								
EQ Prereq 1	Minimum IAQ Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ Prereq 2	Environmental Tobacco Smoke (ETS) Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 1	Carbon Dioxide (CO_2) Monitoring Increase Ventilation Effectiveness	1						
EQ 2	Increase Ventilation Effectiveness	1						
EQ 3.1	Construction IAQ Management Plan, During Construction	1						
EQ 3.2	Construction IAQ Management Plan, Before Occupancy	1						
EQ 4.1	Low-Emitting Materials, Adhesives & Sealants	1						
EQ 4.2	Low-Emitting Materials, Paints	1						
EQ 4.3	Low-Emitting Materials, Carpet	1						
EQ 4.4	Low-Emitting Materials, Composite Wood	1						
EQ 5	Indoor Chemical & Pollutant Source Control	1						
EQ 6.1	Controllability of Systems, Perimeter	1						
EQ 6.2	Controllability of Systems, Non-Perimeter	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.2	Thermal Comfort, permanent Monitoring System	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 8.1	Daylight & Views, Daylight 75% of Spaces	1						
EQ 8.2	Daylight & Views, Views for 90% of Spaces	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	EQ SUBTOTAL	15	4	$0	$0	$0	0.0%	
INNOVATION & DESIGN PROCESS								
ID 1.1	Innovation in Design: Specific Title	1						
ID 1.2	Innovation in Design: Specific Title	1						
ID 1.3	Innovation in Design: Specific Title	1						
ID 1.4	Innovation in Design: Specific Title	1						
ID 2	LEED Accredited Professional	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	ID SUBTOTAL	5	1	$0	$0	$0	0.0%	
	TOTALS	69	13	$598,900	$0	$598,900	7.5%	

LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center

LEED CERTIFIED SCENARIO - 26 POINTS MINIMUM

with Estimated Associated Building Costs

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	15% Contractor Mark Up	Total Estimated Cost	% Increase to Base Bid ($7,988,000)	Comments
SUSTAINABLE SITES								
SS Prereq 1	Erosion & Sedimentation Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 1	Site Selection	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 2	Urban Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 3	Brownfield Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 4.1	Alternative Transportation, Public Trans. Access	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 4.2	Alternative Transportation, Bicycle Storage & Changing Rm.	1						
SS 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1						
SS 4.4	Alternative Transportation, Parking Capacity	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 5.1	Reduced Site Disturbance, Protect of Restore Open Space	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 5.2	Reduced Site Disturbance, Development Footprint	1						Non Applicable considering Senior Center Program
SS 6.1	Stormwater Management, Rate and Quantity	1						
SS 6.2	Stormwater Management, Treatment	1	1	$0	$0	$0	0.0%	No Additional Cost - Implement EPA's Best Mgmt Practices Post-Construction
SS 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-roof	1						
SS 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 8	Light Pollution Reduction	1						Non Applicable at Senior Center / Community Center Public Parking Lot
	SS SUBTOTAL	14	6	$0	$0	$0	0.0%	
WATER EFFICIENCY								
WE 1.1	Water Efficient Landscaping, Reduce by 50%	1	1	$0	$0	$0	0.0%	No Additional Cost
WE 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1						Non Applicable at Senior Center / Community Center Park in California Climate
WE 2	Innovative Wastewater Technologies	1						Non Applicable at Senior Center / Community Center Site
WE 3.1	Water Use Reduction, 20% Reduction	1	1	$0	$0	$0	0.0%	No Additional Cost - high efficiency fixtures
WE 3.2	Water Use Reduction, 30% Reduction	1						
	WE SUBTOTAL	5	2	$0	$0	$0	0.0%	
ENERGY & ATMOSPHERE								
EA Prereq 1	Fundamental Building Systems Commissioning	0	0	$25,000	$0	$25,000	0.3%	Commissioning Consultant contracted by Owner
EA Prereq 2	Minimum Energy Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA Prereq 3	CFC Reduction in HVAC&R Equipment	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.1	Optimize Energy Performance, 20% New / 10% Existing	2	2	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.2	Optimize Energy Performance, 30% New / 20% Existing	2						
EA 1.3	Optimize Energy Performance, 40% New / 30% Existing	2						
EA 1.4	Optimize Energy Performance, 50% New / 40% Existing	2						
EA 1.5	Optimize Energy Performance, 60% New / 50% Existing	2						
EA 2.1	Renewable Energy, 5%	1						
EA 2.2	Renewable Energy, 10%	1						
EA 2.3	Renewable Energy, 20%	1						
EA 3	Additional Commissioning	1						
EA 4	Ozone Depletion	1	1	$0	$0	$0	0.0%	No Additional Cost
EA 5	Measurement & Verification	1						
EA 6	Green Power	1						Non Applicable at Senior Center / Community Center Site
	EA SUBTOTAL	17	3	$25,000	$0	$25,000	0.3%	

ATTACHMENT D
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LEED STUDY FOR CITY OF SUNNYVALE

Case Study: Sunnyvale Senior Center

LEED CERTIFIED SCENARIO - 26 POINTS MINIMUM

with Estimated Associated Building Costs

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	Estimated Contractor Mark Up	Total Estimated Cost	Estimated % Cost Increase	Comments
MATERIALS & RESOURCES								
MR Prereq 1	Storage & Collection of Recyclables	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 1.1	Building Reuse, Maintain 75% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.2	Building Reuse, Maintain 100% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.3	Building Reuse, Maintain 100% of Existing Shell & 50% Non-Shell	1						Non Applicable at Senior Center / Community Center Site
MR 2.1	Construction Waste Management, Divert 50%	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 2.2	Construction Waste Management, Divert 75%	1	1	$0	$0	$0	0.0%	No Additional Cost
MR 3.1	Resource Reuse, Specify 5%	1						
MR 3.2	Resource Reuse, Specify 10%	1						Non Applicable at Senior Center / Community Center Site
MR 4.1	Recycled Content, Specify 25%	1	1	$0	$0	$0	0.0%	No Additional Cost
MR 4.2	Recycled Content, Specify 50%	1						
MR 5.1	Local/Regional materials, 20% Manufactured Locally	1						Non Applicable at Senior Center / Community Center Site
MR 5.2	Local/Regional materials, of 20% Above, 50% Harvested Locally	1						Non Applicable at Senior Center / Community Center Site
MR 6	Rapidly Renewable Materials	1	1	-$800	$0	-$800	0.0%	Bamboo flooring @MP Room, Lobby, Corridors & Lounge, Linoleum @ Program Rooms - Need 5% of total building materials cost for credit
MR 7	Certified Wood	1						
	MR SUBTOTAL	13	4	-$800	$0	-$800	0.0%	
INDOOR ENVIRONMENTAL QUALITY								
EQ Prereq 1	Minimum IAQ Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ Prereq 2	Environmental Tobacco Smoke (ETS) Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 1	Carbon Dioxide (CO2) Monitoring Increase Ventilation Effectiveness	1						
EQ 2	Increase Ventilation Effectiveness	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 3.1	Construction IAQ Management Plan, During Construction	1						
EQ 3.2	Construction IAQ Management Plan, Before Occupancy	1						
EQ 4.1	Low-Emitting Materials, Adhesives & Sealants	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.2	Low-Emitting Materials, Paints	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.3	Low-Emitting Materials, Carpet	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.4	Low-Emitting Materials, Composite Wood	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 5	Indoor Chemical & Pollutant Source Control	1						
EQ 6.1	Controllability of Systems, Perimeter	1						
EQ 6.2	Controllability of Systems, Non-Perimeter	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.2	Thermal Comfort, permanent Monitoring System	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 8.1	Daylight & Views, Daylight 75% of Spaces	1						
EQ 8.2	Daylight & Views, Views for 90% of Spaces	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	EQ SUBTOTAL	15	9	$0	$0	$0	0.0%	
INNOVATION & DESIGN PROCESS								
ID 1.1	Innovation in Design: Specific Title	1	1	$0	$0	$0	0.0%	Sustainable Educational Display
ID 1.2	Innovation in Design: Specific Title	1						
ID 1.3	Innovation in Design: Specific Title	1						
ID 1.4	Innovation in Design: Specific Title	1						
ID 2	LEED Accredited Professional	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	ID SUBTOTAL	5	2	$0	$0	$0	0.0%	
	TOTALS	69	26	$24,200	$0	$24,200	0.3%	

LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center

LEED SILVER SCENARIO - 33 POINTS MINIMUM

with Estimated Associated Building Costs

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	15% Contractor Mark Up	Total Estimated Cost	% Increase to Base Bid ($7,988,000)	Comments
SUSTAINABLE SITES								
SS Prereq 1	Erosion & Sedimentation Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 1	Site Selection	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 2	Urban Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 3	Brownfield Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 4.1	Alternative Transportation, Public Trans. Access	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 4.2	Alternative Transportation, Bicycle Storage & Changing Rm.	1						
SS 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1	1	$8,000	$1,200	$9,200	0.1%	Two dual electric vehicle charging stations
SS 4.4	Alternative Transportation, Parking Capacity	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 5.1	Reduced Site Disturbance, Protect of Restore Open Space	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 5.2	Reduced Site Disturbance, Development Footprint	1						Non Applicable considering Senior Center Program
SS 6.1	Stormwater Management, Rate and Quantity	1						
SS 6.2	Stormwater Management, Treatment	1	1	$0	$0	$0	0.0%	No Additional Cost - Implement EPA's Best Mgmt Practices Post-Construction
SS 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-roof	1						
SS 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 8	Light Pollution Reduction	1						Non Applicable at Senior Center / Community Center Public Parking Lot
	SS SUBTOTAL	14	7	$8,000	$1,200	$9,200	0.1%	
WATER EFFICIENCY								
WE 1.1	Water Efficient Landscaping, Reduce by 50%	1	1	$0	$0	$0	0.0%	No Additional Cost
WE 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1						Non Applicable at Senior Center / Community Center Park in California Climate
WE 2	Innovative Wastewater Technologies	1						Non Applicable at Senior Center / Community Center Site
WE 3.1	Water Use Reduction, 20% Reduction	1	1	$0	$0	$0	0.0%	No Additional Cost - high efficiency fixtures
WE 3.2	Water Use Reduction, 30% Reduction	1						
	WE SUBTOTAL	5	2	$0	$0	$0	0.0%	
ENERGY & ATMOSPHERE								
EA Prereq 1	Fundamental Building Systems Commissioning	0	0	$25,000	$0	$25,000	0.3%	Commissioning Consultant contracted by Owner
EA Prereq 2	Minimum Energy Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA Prereq 3	CFC Reduction in HVAC&R Equipment	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.1	Optimize Energy Performance, 20% New / 10% Existing	2	2	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.2	Optimize Energy Performance, 30% New / 20% Existing	2						
EA 1.3	Optimize Energy Performance, 40% New / 30% Existing	2						
EA 1.4	Optimize Energy Performance, 50% New / 40% Existing	2						
EA 1.5	Optimize Energy Performance, 60% New / 50% Existing	2						
EA 2.1	Renewable Energy, 5%	1						
EA 2.2	Renewable Energy, 10%	1						
EA 2.3	Renewable Energy, 20%	1						
EA 3	Additional Commissioning	1	1	$10,000	$0	$10,000	0.1%	Additional testing and reports - Commissioning Consultant Contracted by Owner
EA 4	Ozone Depletion	1	1	$0	$0	$0	0.0%	No Additional Cost
EA 5	Measurement & Verification	1						
EA 6	Green Power	1						Non Applicable at Senior Center / Community Center Site
	EA SUBTOTAL	17	4	$35,000	$0	$35,000	0.4%	

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LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center

LEED SILVER SCENARIO - 33 POINTS MINIMUM

with Estimated Associated Building Costs

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	Estimated Contractor Mark Up	Total Estimated Cost	Estimated % Cost Increase	Comments
MATERIALS & RESOURCES								
MR Prereq 1	Storage & Collection of Recyclables	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 1.1	Building Reuse, Maintain 75% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.2	Building Reuse, Maintain 100% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.3	Building Reuse, Maintain 100% of Existing Shell & 50% Non-Shell	1						Non Applicable at Senior Center / Community Center Site
MR 2.1	Construction Waste Management, Divert 50%	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 2.2	Construction Waste Management, Divert 75%	1	1	$0	$0	$0	0.0%	No Additional Cost
MR 3.1	Resource Reuse, Specify 5%	1						
MR 3.2	Resource Reuse, Specify 10%	1						Non Applicable at Senior Center / Community Center Site
MR 4.1	Recycled Content, Specify 25%	1	1	$0	$0	$0	0.0%	No Additional Cost
MR 4.2	Recycled Content, Specify 50%	1						
MR 5.1	Local/Regional materials, 20% Manufactured Locally	1						Non Applicable at Senior Center / Community Center Site
MR 5.2	Local/Regional materials, of 20% Above, 50% Harvested Locally	1						Non Applicable at Senior Center / Community Center Site
MR 6	Rapidly Renewable Materials	1	1	-$800	$0	-$800	0.0%	Bamboo flooring @MP Room, Lobby, Corridors & Lounge, Linoleum @ Program Rooms - Need 5% of total building materials cost for credit
MR 7	Certified Wood	1						
	MR SUBTOTAL	13	4	-$800	$0	-$800	0.0%	
INDOOR ENVIRONMENTAL QUALITY								
EQ Prereq 1	Minimum IAQ Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ Prereq 2	Environmental Tobacco Smoke (ETS) Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 1	Carbon Dioxide (CO2) Monitoring Increase Ventilation Effectiveness	1						
EQ 2	Increase Ventilation Effectiveness	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 3.1	Construction IAQ Management Plan, During Construction	1	1	$7,000	$1,050	$8,050	0.1%	Filters & mitigation measures for adjacent buildings (Recreation Bldg.)
EQ 3.2	Construction IAQ Management Plan, Before Occupancy	1	1	$7,000	$0	$7,000	0.1%	Supervision of Building Flush Out
EQ 4.1	Low-Emitting Materials, Adhesives & Sealants	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.2	Low-Emitting Materials, Paints	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.3	Low-Emitting Materials, Carpet	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.4	Low-Emitting Materials, Composite Wood	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 5	Indoor Chemical & Pollutant Source Control	1						
EQ 6.1	Controllability of Systems, Perimeter	1						
EQ 6.2	Controllability of Systems, Non-Perimeter	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.2	Thermal Comfort, permanent Monitoring System	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 8.1	Daylight & Views, Daylight 75% of Spaces	1	1	$6,000	$900	$6,900	0.1%	Increase storefront glazing +70 SF, add (3) 4'x4' horizontal skylights
EQ 8.2	Daylight & Views, Views for 90% of Spaces	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	EQ SUBTOTAL	15	12	$20,000	$1,950	$21,950	0.3%	
INNOVATION & DESIGN PROCESS								
ID 1.1	Innovation in Design: Specific Title	1	1	$0	$0	$0	0.0%	Sustainable Educational Display
ID 1.2	Innovation in Design: Specific Title	1	1	$0	$0	$0	0.0%	Develop Maintenance Program using Environmental cleaning materials
ID 1.3	Innovation in Design: Specific Title	1	1	$10,000	$0	$10,000	0.1%	Substantially exceed a LEED performance credit
ID 1.4	Innovation in Design: Specific Title	1						
ID 2	LEED Accredited Professional	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	ID SUBTOTAL	5	4	$10,000	$0	$10,000	0.1%	
	TOTALS	69	33	$72,200	$3,150	$75,950	0.9%	

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LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center

LEED GOLD SCENARIO - 39 POINTS MINIMUM

with Estimated Associated Building Costs

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	15% Contractor Mark Up	Total Estimated Cost	% Increase to Base Bid ($7,988,000)	Comments
SUSTAINABLE SITES								
SS Prereq 1	Erosion & Sedimentation Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 1	Site Selection	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 2	Urban Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 3	Brownfield Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 4.1	Alternative Transportation, Public Trans. Access	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 4.2	Alternative Transportation, Bicycle Storage & Changing Rm.	1	1	$11,000	$1,650	$12,650	0.2%	Men's & Women's Changing Room with shower
SS 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1	1	$8,000	$1,200	$9,200	0.1%	Two dual electric vehicle charging stations
SS 4.4	Alternative Transportation, Parking Capacity	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 5.1	Reduced Site Disturbance, Protect of Restore Open Space	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 5.2	Reduced Site Disturbance, Development Footprint	1						Non Applicable considering Senior Center Program
SS 6.1	Stormwater Management, Rate and Quantity	1						
SS 6.2	Stormwater Management, Treatment	1	1	$0	$0	$0	0.0%	No Additional Cost - Implement EPA's Best Mgmt Practices Post-Construction
SS 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-roof	1	1	$11,400	$1,710	$13,110	0.2%	Add 30% more 24" box trees
SS 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 8	Light Pollution Reduction	1						Non Applicable at Senior Center / Community Center Public Parking Lot
	SS SUBTOTAL	14	9	$30,400	$4,560	$34,960	0.4%	
WATER EFFICIENCY								
WE 1.1	Water Efficient Landscaping, Reduce by 50%	1	1	$0	$0	$0	0.0%	No Additional Cost
WE 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1						Non Applicable at Senior Center / Community Center Park in California Climate
WE 2	Innovative Wastewater Technologies	1						Non Applicable at Senior Center / Community Center Site
WE 3.1	Water Use Reduction, 20% Reduction	1	1	$0	$0	$0	0.0%	No Additional Cost - high efficiency fixtures
WE 3.2	Water Use Reduction, 30% Reduction	1	1	$15,400	$2,310	$17,710	0.2%	High efficiency / low flow plumbing fixtures and sensors
	WE SUBTOTAL	5	3	$15,400	$2,310	$17,710	0.2%	
ENERGY & ATMOSPHERE								
EA Prereq 1	Fundamental Building Systems Commissioning	0	0	$25,000	$0	$25,000	0.3%	Commissioning Consultant contracted by Owner
EA Prereq 2	Minimum Energy Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA Prereq 3	CFC Reduction in HVAC&R Equipment	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.1	Optimize Energy Performance, 20% New / 10% Existing	2	2	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.2	Optimize Energy Performance, 30% New / 20% Existing	2						
EA 1.3	Optimize Energy Performance, 40% New / 30% Existing	2						
EA 1.4	Optimize Energy Performance, 50% New / 40% Existing	2						
EA 1.5	Optimize Energy Performance, 60% New / 50% Existing	2						
EA 2.1	Renewable Energy, 5%	1						
EA 2.2	Renewable Energy, 10%	1						
EA 2.3	Renewable Energy, 20%	1						
EA 3	Additional Commissioning	1	1	$10,000	$0	$10,000	0.1%	Additional testing and reports - Commissioning Consultant Contracted by Owner
EA 4	Ozone Depletion	1	1	$0	$0	$0	0.0%	No Additional Cost
EA 5	Measurement & Verification	1						
EA 6	Green Power	1						Non Applicable at Senior Center / Community Center Site
	EA SUBTOTAL	17	4	$35,000	$0	$35,000	0.4%	

LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center

LEED GOLD SCENARIO - 39 POINTS MINIMUM

with Estimated Associated Building Costs

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	Estimated Contractor Mark Up	Total Estimated Cost	Estimated % Cost Increase	Comments
MATERIALS & RESOURCES								
MR Prereq 1	Storage & Collection of Recyclables	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 1.1	Building Reuse, Maintain 75% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.2	Building Reuse, Maintain 100% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.3	Building Reuse, Maintain 100% of Existing Shell & 50% Non-Shell	1						Non Applicable at Senior Center / Community Center Site
MR 2.1	Construction Waste Management, Divert 50%	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 2.2	Construction Waste Management, Divert 75%	1	1	$0	$0	$0	0.0%	No Additional Cost
MR 3.1	Resource Reuse, Specify 5%	1						
MR 3.2	Resource Reuse, Specify 10%	1						Non Applicable at Senior Center / Community Center Site
MR 4.1	Recycled Content, Specify 25%	1	1	$0	$0	$0	0.0%	No Additional Cost
MR 4.2	Recycled Content, Specify 50%	1	1	$15,000	$2,250	$17,250	0.2%	Premium for high recycle content materials such as ceiling tiles, & ceramic tile
MR 5.1	Local/Regional materials, 20% Manufactured Locally	1						Non Applicable at Senior Center / Community Center Site
MR 5.2	Local/Regional materials, of 20% Above, 50% Harvested Locally	1						Non Applicable at Senior Center / Community Center Site
MR 6	Rapidly Renewable Materials	1	1	-$800	$0	-$800	0.0%	Bamboo flooring @MP Room, Lobby, Corridors & Lounge, Linoleum @ Program Rooms - Need 5% of total building materials cost for credit
MR 7	Certified Wood	1						
	MR SUBTOTAL	13	5	$14,200	$2,250	$16,450	0.2%	
INDOOR ENVIRONMENTAL QUALITY								
EQ Prereq 1	Minimum IAQ Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ Prereq 2	Environmental Tobacco Smoke (ETS) Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 1	Carbon Dioxide (CO2) Monitoring Increase Ventilation Effectiveness	1						
EQ 2	Increase Ventilation Effectiveness	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 3.1	Construction IAQ Management Plan, During Construction	1	1	$7,000	$1,050	$8,050	0.1%	Filters & mitigation measures for adjacent buildings (Recreation Bldg.)
EQ 3.2	Construction IAQ Management Plan, Before Occupancy	1	1	$7,000	$0	$7,000	0.1%	Supervision of Building Flush Out
EQ 4.1	Low-Emitting Materials, Adhesives & Sealants	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.2	Low-Emitting Materials, Paints	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.3	Low-Emitting Materials, Carpet	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.4	Low-Emitting Materials, Composite Wood	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 5	Indoor Chemical & Pollutant Source Control	1	1	$10,000	$1,500	$11,500	0.1%	Entryway grilles/grates at Main & Patio Doors
EQ 6.1	Controllability of Systems, Perimeter	1	1	$9,000	$1,350	$10,350	0.1%	Operable windows @ bottom pane of all aluminum storefront windows
EQ 6.2	Controllability of Systems, Non-Perimeter	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.2	Thermal Comfort, permanent Monitoring System	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 8.1	Daylight & Views, Daylight 75% of Spaces	1	1	$6,000	$900	$6,900	0.1%	Increase storefront glazing +70 SF, add (3) 4'x4' horizontal skylights
EQ 8.2	Daylight & Views, Views for 90% of Spaces	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	EQ SUBTOTAL	15	14	$39,000	$4,800	$43,800	0.5%	
INNOVATION & DESIGN PROCESS								
ID 1.1	Innovation in Design: Specific Title	1	1	$0	$0	$0	0.0%	Sustainable Educational Display
ID 1.2	Innovation in Design: Specific Title	1	1	$0	$0	$0	0.0%	Develop Maintenance Program using Environmental cleaning materials
ID 1.3	Innovation in Design: Specific Title	1	1	$10,000	$0	$10,000	0.1%	Substantially exceed a LEED performance credit
ID 1.4	Innovation in Design: Specific Title	1						
ID 2	LEED Accredited Professional	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	ID SUBTOTAL	5	4	$10,000	$0	$10,000	0.1%	
	TOTALS	69	39	$144,000	$13,920	$157,920	2.0%	

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LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center

LEED PLATINUM SCENARIO - 52 POINTS MINIMUM

with Estimated Associated Building Costs

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	15% Contractor Mark Up	Total Estimated Cost	% Increase to Base Bid ($7,988,000)	Comments
SUSTAINABLE SITES								
SS Prereq 1	Erosion & Sedimentation Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 1	Site Selection	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 2	Urban Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 3	Brownfield Redevelopment	1						Non Applicable at Senior Center / Community Center Site
SS 4.1	Alternative Transportation, Public Trans. Access	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
SS 4.2	Alternative Transportation, Bicycle Storage & Changing Rm.	1	1	$11,000	$1,650	$12,650	0.2%	Men's & Women's Changing Room with shower
SS 4.3	Alternative Transportation, Alternative Fuel Refueling Stations	1	1	$8,000	$1,200	$9,200	0.1%	Two dual electric vehicle charging stations
SS 4.4	Alternative Transportation, Parking Capacity	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 5.1	Reduced Site Disturbance, Protect of Restore Open Space	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 5.2	Reduced Site Disturbance, Development Footprint	1						Non Applicable considering Senior Center Program
SS 6.1	Stormwater Management, Rate and Quantity	1	1	$33,000	$4,950	$37,950	0.5%	Pervious Paving at Parking Lots
SS 6.2	Stormwater Management, Treatment	1	1	$0	$0	$0	0.0%	No Additional Cost - Implement EPA's Best Mgmt Practices Post-Construction
SS 7.1	Landscape & Exterior Design to Reduce Heat Islands, Non-roof	1	1	$11,400	$1,710	$13,110	0.2%	Add 30% more 24" box trees
SS 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof	1	1	$0	$0	$0	0.0%	No Additional Cost
SS 8	Light Pollution Reduction	1						Non Applicable at Senior Center / Community Center Public Parking Lot
	SS SUBTOTAL	14	10	$63,400	$9,510	$72,910	0.9%	
WATER EFFICIENCY								
WE 1.1	Water Efficient Landscaping, Reduce by 50%	1	1	$0	$0	$0	0.0%	No Additional Cost
WE 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1						Non Applicable at Senior Center / Community Center Park in California Climate
WE 2	Innovative Wastewater Technologies	1						Non Applicable at Senior Center / Community Center Site
WE 3.1	Water Use Reduction, 20% Reduction	1	1	$0	$0	$0	0.0%	No Additional Cost - high efficiency fixtures
WE 3.2	Water Use Reduction, 30% Reduction	1	1	$15,400	$2,310	$17,710	0.2%	High efficiency / low flow plumbing fixtures and sensors
	WE SUBTOTAL	5	3	$15,400	$2,310	$17,710	0.2%	
ENERGY & ATMOSPHERE								
EA Prereq 1	Fundamental Building Systems Commissioning	0	0	$25,000	$0	$25,000	0.3%	Commissioning Consultant contracted by Owner
EA Prereq 2	Minimum Energy Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA Prereq 3	CFC Reduction in HVAC&R Equipment	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.1	Optimize Energy Performance, 20% New / 10% Existing	2	2	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EA 1.2	Optimize Energy Performance, 30% New / 20% Existing	2	2					
EA 1.3	Optimize Energy Performance, 40% New / 30% Existing	2	2					High Efficiency Water Chilled HVAC System, High Performanc Glazing, Raised
EA 1.4	Optimize Energy Performance, 50% New / 40% Existing	2	2	$250,000	$37,500	$287,500	3.6%	Floor Plenem air circulation
EA 1.5	Optimize Energy Performance, 60% New / 50% Existing	2						
EA 2.1	Renewable Energy, 5%	1	1					
EA 2.2	Renewable Energy, 10%	1	1					
EA 2.3	Renewable Energy, 20%	1	1	$598,900	inclusive	$598,900	7.5%	Photovoltaic System - Add Alternate Incorporated in Original Design
EA 3	Additional Commissioning	1	1	$10,000	$0	$10,000	0.1%	Additional testing and reports - Commissioning Consultant Contracted by Owner
EA 4	Ozone Depletion	1	1	$0	$0	$0	0.0%	No Additional Cost
EA 5	Measurement & Verification	1	1	$20,000	$0	$20,000	0.3%	Professional Services of Energy Consultant contracted by Owner
EA 6	Green Power	1						Non Applicable at Senior Center / Community Center Site
	EA SUBTOTAL	17	14	$903,900	$37,500	$941,400	11.8%	

LEED STUDY FOR CITY OF SUNNYVALE
Case Study: Sunnyvale Senior Center

LEED PLATINUM SCENARIO - 52 POINTS MINIMUM

with Estimated Associated Building Costs

LEED Credit	Description	Possible LEED Points	Potential for Senior Center	Estimated Material Cost	Estimated Contractor Mark Up	Total Estimated Cost	Estimated % Cost Increase	Comments
MATERIALS & RESOURCES								
MR Prereq 1	Storage & Collection of Recyclables	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 1.1	Building Reuse, Maintain 75% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.2	Building Reuse, Maintain 100% of Existing Shell	1						Non Applicable at Senior Center / Community Center Site
MR 1.3	Building Reuse, Maintain 100% of Existing Shell & 50% Non-Shell	1						Non Applicable at Senior Center / Community Center Site
MR 2.1	Construction Waste Management, Divert 50%	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
MR 2.2	Construction Waste Management, Divert 75%	1	1	$0	$0	$0	0.0%	No Additional Cost
MR 3.1	Resource Reuse, Specify 5%	1						
MR 3.2	Resource Reuse, Specify 10%	1						Non Applicable at Senior Center / Community Center Site
MR 4.1	Recycled Content, Specify 25%	1	1	$0	$0	$0	0.0%	No Additional Cost
MR 4.2	Recycled Content, Specify 50%	1	1	$15,000	$2,250	$17,250	0.2%	Premium for high recycle content materials such as ceiling tiles, & ceramic tile
MR 5.1	Local/Regional materials, 20% Manufactured Locally	1						Non Applicable at Senior Center / Community Center Site
MR 5.2	Local/Regional materials, of 20% Above, 50% Harvested Locally	1						Non Applicable at Senior Center / Community Center Site
MR 6	Rapidly Renewable Materials	1	1	-$800	$0	-$800	0.0%	Bamboo flooring @MP Room, Lobby, Corridors & Lounge, Linoleum @ Program Rooms - Need 5% of total building materials cost for credit
MR 7	Certified Wood	1	1	$20,000	$3,000	$23,000	0.3%	Certified Wood in Roof Framing
	MR SUBTOTAL	13	6	$34,200	$5,250	$39,450	0.5%	
INDOOR ENVIRONMENTAL QUALITY								
EQ Prereq 1	Minimum IAQ Performance	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ Prereq 2	Environmental Tobacco Smoke (ETS) Control	0	0	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 1	Carbon Dioxide (CO2) Monitoring Increase Ventilation Effectiveness	1	1	$25,000	$3,750	$28,750	0.4%	Economizers
EQ 2	Increase Ventilation Effectiveness	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 3.1	Construction IAQ Management Plan, During Construction	1	1	$7,000	$1,050	$8,050	0.1%	Filters & mitigation measures for adjacent buildings (Recreation Bldg.)
EQ 3.2	Construction IAQ Management Plan, Before Occupancy	1	1	$7,000	$0	$7,000	0.1%	Supervision of Building Flush Out
EQ 4.1	Low-Emitting Materials, Adhesives & Sealants	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.2	Low-Emitting Materials, Paints	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.3	Low-Emitting Materials, Carpet	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 4.4	Low-Emitting Materials, Composite Wood	1	1	$0	$0	$0	0.0%	No Additional Cost
EQ 5	Indoor Chemical & Pollutant Source Control	1	1	$10,000	$1,500	$11,500	0.1%	Entryway grilles/grates at Main & Patio Doors
EQ 6.1	Controllability of Systems, Perimeter	1	1	$9,000	$1,350	$10,350	0.1%	Operable windows @ bottom pane of all aluminum storefront windows
EQ 6.2	Controllability of Systems, Non-Perimeter	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.1	Thermal Comfort, Comply with ASHRAE 55-1992	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 7.2	Thermal Comfort, permanent Monitoring System	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
EQ 8.1	Daylight & Views, Daylight 75% of Spaces	1	1	$6,000	$900	$6,900	0.1%	Increase storefront glazing +70 SF, add (3) 4'x4' horizontal skylights
EQ 8.2	Daylight & Views, Views for 90% of Spaces	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	EQ SUBTOTAL	15	15	$64,000	$8,550	$72,550	0.9%	
INNOVATION & DESIGN PROCESS								
ID 1.1	Innovation in Design: Specific Title	1	1	$0	$0	$0	0.0%	Sustainable Educational Display
ID 1.2	Innovation in Design: Specific Title	1	1	$0	$0	$0	0.0%	Develop Maintenance Program using Environmental cleaning materials
ID 1.3	Innovation in Design: Specific Title	1	1	$10,000	$0	$10,000	0.1%	Substantially exceed a LEED performance credit
ID 1.4	Innovation in Design: Specific Title	1						
ID 2	LEED Accredited Professional	1	1	$0	$0	$0	0.0%	Incorporated in Original Design and Base Bid
	ID SUBTOTAL	5	4	$10,000	$0	$10,000	0.1%	
	TOTALS	69	52	$1,090,900	$63,120	$1,154,020	14.4%	

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7/12/03

LEED V2.1 Analysis for Java/Mathilda Core and Shell Sunnyvale, CA

Project Checklist

Sustainable Sites

14 Possible Points

LEED System Points	Probable Project Points (Existing Condition)	Possible Project Points with Strong Likelihood (if New Project)	"Strong Likelihood" Cost Impact	Possible Project Points with Less Strong Likelihood (if New Project)	"Less Strong Likelihood" Cost Impact	Project Cannot Meet Criteria			Comments
0	Met						Prereq 1	**Erosion & Sedimentation Control**	
1						1	Credit 1	**Site Selection**	
1						1	Credit 2	**Urban Redevelopment**	
1						1	Credit 3	**Brownfield Redevelopment**	
1	1						Credit 4.1	**Alternative Transportation Public,** Transportation Access	
1		1	$50,000				Credit 4.2	**Alternative Transportation,** Bicycle Storage & Changing Rooms	
1		1	$10,000				Credit 4.3	**Alternative Transportation,** Alternative Fuel Vehicles	
1						1	Credit 4.4	**Alternative Transportation,** Parking Capacity	
1				1			Credit 5.1	**Reduced Site Disturbance,** Protect or Restore Open Space	Cost Prohibitive
1	1						Credit 5.2	**Reduced Site Disturbance,** Development Footprint	
1	1						Credit 6.1	**Stormwater Management,** Rate and Quality	
1		1	$2,000				Credit 6.2	**Stormwater Management,** Treatment	
1		1	$40,000				Credit 7.1	**Heat Island Effect,** Non-Roof	
1		1	$50,000				Credit 7.2	**Heat Island Effect,** Roof	
1		1	$80,000				Credit 8	**Light Pollution Reduction**	
14	**3**	**6**	**$232,000**	**1**		**4**		**Subtotals**	

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Water Efficiency

5 Possible Points

LEED System Points	Probable Project Points (Existing Condition)	Possible Project Points with Strong Likelihood (if New Project)	"Strong Likelihood" Cost Impact	Possible Project Points with Less Strong Likelihood (if New Project)	"Less Strong Likelihood" Cost Impact	Project Cannot Meet Criteria			Comments
1	1						Credit 1.1	**Water Efficient Landscaping,** Reduce by 50%	
1	1						Credit 1.2	**Water Efficient Landscaping, No Potable Use or No Irrigation**	
1				1			Credit 2	**Innovative Wastewater Technologies**	Cost Prohibitive
1		1	$0				Credit 3.1	**Water Use Reduction,** 20% Reduction	
1		1	$5,000				Credit 3.2	**Water Use Reduction,** 30% Reduction	
5	**2**	**2**	**$5,000**	**1**		**0**		**Subtotals**	

Energy & Atmosphere

17 Possible Points

LEED System Points	Probable Project Points (Existing Condition)	Possible Project Points with Strong Likelihood (if New Project)	"Strong Likelihood" Cost Impact	Possible Project Points with Less Strong Likelihood (if New Project)	"Less Strong Likelihood" Cost Impact	Project Cannot Meet Criteria			Comments
0	Met						Prereq 1	**Fundamental Building Systems Commissioning**	
0	Met						Prereq 2	**Minimum Energy Performance**	
0	Met						Prereq 3	**CFC Reduction in HVAC&R Equipment**	
10	2			1 add.	$400,000		Credit 1	**Optimize Energy Performance**	Cost is for additional credit
1				1	$500,000		Credit 2.1	**Renewable Energy,** 5%	

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1				1			Credit 2.2	**Renewable Energy,** 10%	Cost Prohibitive
1				1			Credit 2.3	**Renewable Energy,** 20%	Cost Prohibitive
1		1	$50,000				Credit 3	**Additional Commissioning**	
1				1			Credit 4	**Ozone Depletion**	Cost Prohibitive
1		1	$30,000				Credit 5	**Measurement & Verification**	
1				1			Credit 6	**Green Power**	Unknown Impact
17	**2**	**2**	**$80,000**	**6**		**0**		**Subtotals**	

Materials & Resources

13 Possible Points

LEED System Points	Probable Project Points (Existing Condition)	Possible Project Points with Strong Likelihood (if New Project)	"Strong Likelihood" Cost Impact	Possible Project Points with Less Strong Likelihood (if New Project)	"Less Strong Likelihood" Cost Impact	Project Cannot Meet Criteria			Comments
0	Met						Prereq 1	**Storage and Collection Recyclables**	
1						1	Credit 1.1	**Building Reuse,** Maintain 75% of Existing Shell	
1						1	Credit 1.2	**Building Reuse,** Maintain 100% of Shell	
1						1	Credit 1.3	**Building Reuse,** Maintain 100% Shell & 50% Non-Shell	
1		1	$20,000				Credit 2.1	**Construction Waste Management,** Divert 50%	
1		1	$30,000				Credit 2.2	**Construction Waste Management,** Divert 75%	
1						1	Credit 3.1	**Resource Reuse,** Specify 5%	
1						1	Credit 3.2	**Resource Reuse,** Specify 10%	
1		1	$40,000				Credit 4.1	**Recycled Content,** Specify 5% (p.c. + ½ p.i.)	
1				1			Credit 4.2	**Recycled Content,** Specify 10% (p.c. + ½ p.i.)	Cost Prohibitive

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1	1						Credit 5.1	**Local/Regional Materials** 20% Manufactured Locally	
1				1	$250,000		Credit 5.2	**Local/Regional Materials,** of 20% in MRc5.1, 50% Harvested Locally	Likely would require structural system change
1				NA			Credit 6	**Rapidly Renewable Materials**	"Less Strong Likelihood" if T.I. was incl. in scope; $100K cost
1		1	$20,000				Credit 7	**Certified Wood**	"Less Strong Likelihood" if T.I. was included in scope
13	**1**	**4**	**$110,000**	**2**		**5**		**Subtotals**	

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Indoor Environmental Quality

15 Possible Points

LEED System Points	Probable Project Points (Existing Condition)	Possible Project Points with Strong Likelihood (if New Project)	"Strong Likelihood" Cost Impact	Possible Project Points with Less Strong Likelihood (if New Project)	"Less Strong Likelihood" Cost Impact	Project Cannot Meet Criteria			Comments
0	Met						Prereq 1	**Minimum IAQ Performance**	
0	Not Met	Would Be Met					Prereq 2	**Environmental Tobacco Smoke (ETS) Control**	No Cost Impact
1		1	$10,000				Credit 1	**Carbon Dioxide (CO_2) Monitoring**	
1				1	$1.1M		Credit 2	**Ventilation Effectiveness**	
1		1	$20,000				Credit 3.1	**Construction IAQ Management Plan,** During Construction	
1		NA					Credit 3.2	**Construction IAQ Management Plan,** Before Occupancy	"Strong Likelihood" if T.I. was incl. in scope; min $15K+ cost
1		1	$0				Credit 4.1	**Low-Emitting Materials,** Adhesives & Sealants	
1		1	$0				Credit 4.2	**Low-Emitting Materials,** Paints	
1		NA					Credit 4.3	**Low-Emitting Materials,** Carpet	"Strong Likelihood" if T.I. was included in scope; $0 cost
1		1	$0				Credit 4.4	**Low-Emitting Materials,** Composite Wood	
1		1	$20,000				Credit 5	**Indoor Chemical & Pollutant Source Control**	
1				NA			Credit 6.1	**Controllability of Systems,** Perimeter	"Less Strong Likelihood" if T.I. was incl. in scope; $250K cost
1						1	Credit 6.2	**Controllability of Systems,** Non-Perimeter	
1		1	$0				Credit 7.1	**Thermal Comfort,** Comply with ASHRAE 55-1992	LEED Interpretation Required
1		1	$15,000				Credit 7.2	**Thermal Comfort,** Permanent Monitoring System	Credit 7.1 Needed First
1				NA			Credit 8.1	**Daylight & Views,** Daylight 75% of Spaces	"Less Strong Likelihood" if T.I. was included in scope
1		NA					Credit 8.2	**Daylight & Views,** Views for 90% of Spaces	"Strong Likelihood" if T.I. was included in scope; $0 cost
15	**0**	**8**	**$65,000**	**1**		**1**		**Subtotals**	

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Innovation & Design Process

5 Possible Points

LEED System Points	Probable Project Points (Existing Condition)	Possible Project Points with Strong Likelihood (if New Project)	"Strong Likelihood" Cost Impact	Possible Project Points with Less Strong Likelihood (if New Project)	"Less Strong Likelihood" Cost Impact	Project Cannot Meet Criteria			Comments
1		1	$0				Credit 1.1	**Innovation in Design**	Example: Education of Occupants
1				1			Credit 1.2	**Innovation in Design**	Unknown Cost Impact
1				1			Credit 1.3	**Innovation in Design**	Unknown Cost Impact
1				1			Credit 1.4	**Innovation in Design**	Unknown Cost Impact
1		1	$0				Credit 2	**LEED™ Accredited Professional**	
5	**0**	**2**	**$0**	**3**		**0**		**Subtotals**	

69	**8**	**24**	**$492,000**	**14**		**10**		**Project Point Totals** 69 Possible Points	
								Certified 26-32 points; **Silver** 33-38 points; **Gold** 39-51 points; **Platinum** 52-69 points	

Project Cost Totals

$14.0M							Total Construction Cost (existing project)
		$492,000					Total Cost Increase for "Strong Likelihood" Credits

Summary
69 – Total LEED System Points Allowed
08 – Total Probable Points, LEED Uncertified (existing condition), "0" project cost impact
24 – Total Possible Project Points with Strong Likelihood (if new core/shell project), 08 + 24 = 32, Certified, at $492,000 = increase of 4% of "construction cost"

To achieve Silver level (if new core/shell project), include "LEED certification" credits + credit MR 5.2 at $250,000 = increase of 6% of "construction cost"
Gold level is cost prohibitive, and platinum level is not attainable.

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Appendix A

Impacts on LEED Credits by City Ordinances
January 9, 2004

LEED V2.1 Analysis for
Java/Mathilda Core and Shell
Sunnyvale, CA

RMW prepared an analysis for the Java/Mathilda Core and Shell Project dated December 15, 2003, based on USGBC LEED system Version 2.1. The analysis of the existing development was intended to determine how a typical new office building development in the City of Sunnyvale would perform in relation to the LEED Green Building Rating System. The analysis concluded that, although the Java/Mathilda project did not base its development on LEED certification, it did garner some LEED credits. Some of those credits captured were due to beneficial site conditions, while others were due to design. Of those captured, a few of the credits (and prerequisites) were garnered, in part, because of City of Sunnyvale Ordinance requirements.

Following is a list of credits that were positively impacted by City of Sunnyvale Ordinances, and other City of Sunnyvale key elements:

LEED Credit	Ordinance or System Impacting Credit
Sustainable Sites, **Erosion & Sedimentation Control**, Prerequisite 1 (prereq only, no credits available)	City of Sunnyvale Best Management Practices
Sustainable Sites, **Alternative Transportation**, Public Transportation Access, Credit 4.1 (1 credit captured)	Light rail system in close proximity to site
Sustainable Sites, **Alternative Transportation**, Bicycle Storage & Changing Rooms, Credit 4.2 (0 credits captured)	Santa Clara Valley Transportation Authority Technical Guidelines for bike parking used by City of Sunnyvale, although not meeting the count requirement by LEED, was positively impacting this credit
Sustainable Sites, **Alternative Transportation**, Alternative Fuel Vehicles, Credit 4.4 (0 credits captured)	City of Sunnyvale Title 19 requiring preferential parking for HOV's. Credit not captured because overall site parking capacity exceeded minimum reqt.
Sustainable Sites, **Heat Island Affect**, Non-Roof, Credit 7.1 (0 credits captured)	City of Sunnyvale Title 19 requiring 50% coverage in 15 years, although not meeting the 30%/5 yr requirement by LEED, is a strong step towards meeting the spirit of the credit. There is a potential for this reqt to change as LEED is looking into possibly modifying this credit to make it more achievable, and realistic. City of Sunnyvale's 50%/15yr reqt is likely the type of direction LEED is investigating.
Water Efficiency, **Water Efficient Landscaping**, Reduce by 50%, Credit 1.1 (1 credit captured)	City of Sunnyvale recycled water system achieves this credit
Water Efficiency, **Water Efficient Landscaping**, No Potable Use or No Irrigation, Credit 1.2 (1 credit captured)	City of Sunnyvale recycled water system achieves this credit
Energy & Atmosphere, **Minimum Energy Performance**, Prerequisite 2 (prereq only, no credits available)	Title 24 requirements achieves this prerequisite
Energy & Atmosphere, **Optimize Energy Performance**, Credit 1 (2 credits captured)	Title 24 requirements aided in capturing credits
Materials & Resources, **Storage & Collection of Recyclables**, Prerequisite 1 (prereq only, no credits available	City of Sunnyvale Title 19 requiring recyclable storage

COUNCIL POLICY FORM

SUBJECT: Sustainable Development and Green Buildings

POLICY PURPOSE

This policy is designed to encourage sustainable development throughout the City of Sunnyvale, provide education and information to the community, and to serve as an acknowledgement by the City Council of the importance of sustainable development concepts and practices.

POLICY STATEMENT

It is the policy of the City Council to encourage new and remodeled development within the City to incorporate sustainable design principles in the following disciplines:

- Sustainable sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality

The City of Sunnyvale adopts the following policy statements in recognition of the importance of sustainable development:

- Remodeled City facilities will incorporate sustainable design practices in the areas noted above (e.g. carpeting, paint, recycled content materials, concrete, Certified Wood, etc.) to the extent practicable.

- As material specifications and standards for maintenance and remodeling of City facilities are reviewed, inclusion of sustainable design practices (e.g. carpeting, paint, recycled content materials, environmentally-friendly cleaning products, concrete, Certified Wood, etc.) will be considered by staff.

- City staff are encouraged to attend green building seminars and workshops to keep current with industry innovations and products.

- Provide on-going education and outreach to residents, businesses, and development community.

- Prior to the planning or design of any new city facility over 10,000 square feet of conditioned space, LEED certification with the US Green Building Council will be considered by the City Council.

- New residential construction shall be encouraged to use the Alameda County Waste Management Authority's *Home Remodeling: Green Building Guidelines* for green building design and construction techniques.

- Provide incentives industrial/office development to incorporate green building design practices.

Report to Council No. _____

Approved by Council on _____

Deputy City Clerk Certification _____

DRAFT
ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SUNNYVALE AMENDING SECTION 19.32.070 OF THE SUNNYVALE MUNICIPAL CODE PERTAINING TO FLOOR AREA RATIO

THE CITY COUNCIL OF THE CITY OF SUNNYVALE DOES ORDAIN AS FOLLOWS:

SECTION 1. SECTION 19.32.070 AMENDED. Section 19.66 of the Sunnyvale Municipal Code is hereby amended to read as set forth in Exhibit "A," attached and incorporated by reference.

SECTION 2. EXEMPTION FROM CEQA. The City Council finds, pursuant to Title 14 of the California Code of Regulations, Section 15061(b)(3), that this ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) in that it is not a Project which has the potential for causing a significant effect on the environment.

SECTION 3. EFFECTIVE DATE. This ordinance shall be in full force and effect thirty (30) days from and after the date of its adoption.

SECTION 4. POSTING AND PUBLICATION. The City Clerk is directed to cause copies of this ordinance to be posted in three (3) prominent places in the City of Sunnyvale and to cause publication once in an adjudicated newspaper of general circulation in the City of Sunnyvale, of a notice setting forth the date of adoption, the title of this ordinance, and a list of places where copies of this ordinance are posted, within fifteen (15) days after adoption of this ordinance.

Introduced at a regular meeting of the City Council held _____, 2004, and adopted as an ordinance of the City of Sunnyvale at a regular meeting of the City Council held on _____, 2004, by the following vote:

AYES:
NOES:
ABSENT:

ATTEST: APPROVED:

_____ _____
City Clerk Mayor
(SEAL)

Section 19.32.070.
FLOOR AREA RATIO (FAR)

DRAFT ORDINANCE

(6) Sustainable Development. Buildings located in the industrial zoning districts will be allowed an additional 5% Floor Area Ratio (FAR) above that allowed by the existing zoning district and General Plan, without a Use Permit (unless otherwise required by the SMC), when all of the following conditions are met:

a. The building is designed to a LEED Certified building or a higher level;
b. The building is registered and intended to be certified by the US Green Building Council (USGBC);
c. A LEED accredited professional is required on the design team; and
d. The entire project site has a Transportation Demand Management (TDM) program that shows traffic trip rates are not greater than the base FAR would generate.